BRUHAT BANGALORE MAHANAGARA PALIKE
YELAHANKA ZONE

Estimate Cost Rs. **2259519.00**

Name of Work: Modified Estimate for Construction of Two Pure Drinking Water Units in Ward No. 07, Byatarayanapura.

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
1	KSRB 2-1.1: Earth work in surface excavation in **ordinary soil** for leveling and lowering the ground manually (other than foundation of buildings, culverts, road drains and trenches of pipe line and cables) and removing the excavated stuff to a distance not exceeding 50m and lift upto 1.5m, excavated surface leveled and neatly dressed, disposed earth to be leveled after breaking of clods and neatly dressed as per specifications, Specification No KBS 2.1(a) / 2.3.1, **No. 5 / Item No. 2.1 / PWD SR 2015-16**	Cum							
	For Leveling Ground		2	4.00	3.50	0.15	4.20		
							4.20	140.00	**588.00**
2	KSRB 2-2.2 : Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, **in Hard soil** not exceeding 1.5m, in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m, after breaking of clods complete as per specifications, specification, No, KBS 2.1(a) / 2.3.5, **Page No. 5 / Item No. 2.3 / PWD SR 2015-16**	Cum							
	Centre Line 2 Nos		4	3.65	0.90	0.90	11.83		
			4	3.05	0.90	0.90	9.88		
							21.71	260.00	**5644.00**
3	KSRB 4-1.3 : Providing and laying in position plain cement concrete of **mix 1:4:8 with OPC cement @ 180 kgs with 40mm** and down size graded granite metal coarse aggregates @ 0.85cum and fine aggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1,4.2. **No. 12 / Item No. 4.3 / PWD SR 2015-16**	Cum							
	Wall Portion		4	3.65	0.90	0.15	1.97		
			4	3.05	0.90	0.15	1.65		
	Flooring		2	3.20	2.60	0.15	2.50		
	Building Suroundings		4	3.65	0.60	0.15	1.31		
			4	3.05	0.60	0.15	1.10		
							8.53	4700.00	**40072.00**

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
4	KSRB 5.2.3 : Providing and constructing granite / trap / basalt size stone masonry in **foundation with cement mortar 1:6**, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5.1.13 **Page No. 23 / Item No. 5.6 / PWD SR 2015-16**	Cum							
	Wall Portion		4	3.65	0.75	0.60	6.57		
			4	3.05	0.75	0.60	5.49		
							12.06	3800.00	**45828.00**
5	KSRB 5.3-3 : Providing and constructing granite / trap / basalt size stone masonry in **basement with cement mortar 1:6**, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5-1.13 **Page No. 23 / Item No. 5.9 / PWD SR 2015-16**	Cum							
	Wall Portion		4	3.45	0.45	0.45	2.79		
			4	2.90	0.45	0.45	2.35		
							5.14	4500.00	**23146.00**
6	KSRB 2.3 : Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. Specification No. KBS 2.9 **Page No. 6 / Item No. 2.10 PWD SR 2015-16**	Cum							
			Qty Vide Item No. 1				**21.71**	110.00	**2388.00**
7	KSRB 4-1.6 : Providing and laying in position plain cement concrete of **mix 1:2:4 with cement @ 240 kgs with 20mm** and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15cms, thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications, specification. No. KBS 4.1,4.2. **No. 12/ Item No. 4.6 / PWD SR 2015-16**	Cum							
			4	3.45	0.45	0.10	0.62		
			4	2.90	0.45	0.10	0.52		
	Building Suroundings		4	3.65	0.60	0.10	0.88		
			4	3.05	0.60	0.10	0.73		
							2.75	5100.00	**14030.00**

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
8	Providing flooring with 60 cms.x 60 cms. size Vitrified glazed tiles of approved quality & make, fixed on top of existing flooring fixed with suitable adhesive, including cutting the tiles to the required size and fixing etc., complete **Page No. 107, Item No. 14.44, PWD SR 2015-16**	Sqm							
			2	3.20	2.60		16.64		
							16.64	900.00	**14976.00**
9	**Providing R.O. Plant**								
	Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour								
	TECHNICAL SPECIFICATIONS								
	Flow Rate:								
	Feed Water : 5000 LPH								
	Treated Water : 3000 LPH								
	Reject Water : 2000 LPH								
	RAW WATER PUMP								
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?								
	SAND MEDIA FILTER								
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members								
	ACTIVATE CARBON FILTER								
	Purpose:- To remove the total color, smell, odor from the water.								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size								
	DOSING SYSTEM								
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes								
	MICRON FILTER								
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.								
	HIGH PRESSURE PUMP								
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic								
	RO membrane housing.								
	Purpose : To pack membrane and operate at high pressure.								
	RO MEMBRANES								
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.								
	RO CLEANSING SYSTEM								
	ELECTRICAL PANEL								
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.								

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.								
	INSTRUMENTATION								
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system								
	PH DOSING SYSTEM								
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.	Nos							
			2				**2**	780000.00	**1560000.00**
	ELECTRIFCATION								
10	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch **(Page No. 05, Item No.2.1 KPWD SR 2014-15**	Point							
			12				**12**	220.00	**2640.00**
11	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Point	12				**12**	320.00	**3840.00**
12	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (1.6.5) 4"x4"x3" (101x101x76mm) **(Page No. 03, Item No. 1.6) KPWD SR 2014-15**	Each							
			20				**20**	50.00	**1000.00**
13	(1.6.1) 12"x12"x3" (300x300x76mm)	Each	15				**15**	90.00	**1350.00**
14	(1.6.3)10"x7"x3" (254x178x76mm)	Each	18				**18**	70.00	**1260.00**
15	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws. **(Page No. 17, Item No. 3.9) KPWD SR 2014-15**	SqCM							
							26666.00	0.22	**5867.00**

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
16	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall **(Page No. 03, Item No.1.7.1) KPWD SR 2014-15**	Mtr							
			2	30.00			**60**	20.00	**1200.00**
17	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary. **(Page No. 02, Item No. 1.3.1) KPWD SR 2014-15**	Mtr							
			2	25.00			**50**	40.00	**2000.00**
18	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps. **(Page No. 20, Item No. 4.2) KPWD SR 2014-15**	Each							
			2				**2**	70.00	**140.00**
19	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp. **(Page No. 20, Item No. 4.5) KPWD SR 2014-15**	Each							
			4				**4**	520.00	**2080.00**
20	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm **(Page No. 06, Item No. 2.5.2) KPWD SR 2014-15**	Mtr							
			2	15.00			**30**	10.00	**300.00**
21	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp. **(Page No. 20, Item No. 4.3) KPWD SR 2014-15**	Each							
			2				**2**	550.00	**1100.00**
22	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia **(Page No. 55, Item No. 7.1) KPWD SR 2014-15**	No							

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
			2				**2**	2500.00	**5000.00**
23	Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip (except 2CX10Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP of GROUP-A **P No. 52 / I No. 7.4.4 4 core 16 Sqmm KPWD Electrical SR 2014-15**	Mtr							
			2	20.00			**40.00**	100.00	**4000.00**
24	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required.In existing trench/duct. **P No. 68 / I No. 7.8.1 6Sqmm to 16 Sqmm) KPWD Electrical SR 2014-15**	Mtr							
			2	20.00			**40.00**	10.00	**400.00**
25	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete.(As per Civil SR KSRB I-2, P-7) **P No. 68 / I. No. 7.9.3 KPWD Electrical SR 2014-15**	Mtr							
	For Cutting Road Surface		2	15.00			**30.00**	70.00	**2100.00**
26	Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV **P. No. 68 / I No. 7.12.1 KPWD Electrical SR 2014-15**	Mtr							
	40mm dia GI pipe		2	4.00			**8.00**	310.00	**2480.00**
27	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc., **P. No. 69 / I.No. 7.13.2 KPWD Electrical SR 2014-15**	No.							
	16Sqmm		2				**2.00**	240.00	**480.00**
28	Polythylene water storage tank of specified capacity and make	L							
			1	2000.00			**2000**	5.00	**10000.00**
29	Providing and fixing Chorinated Poly Venyl Chloride (CPVC) pipes conforming to IS 15778, having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamp at 1.00 mtr spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete. (internal work exposed on wall) - 20mm nominal OD pipes **Page No. 96, Item No. 13.85.2, PWD SR 2015-16**	m							
			1	50.00			**50**	104.00	**5200.00**
	EIRL								

Sl No	Description of item	Unit	No	L	B	D	Qty	Rate	Amount
41	Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 mm thick tuve purlines, roof panel of 30 mm sandwitch puf panel density : 40 kg and wall panel of 30 mm sandwitch puf pannel density : 40 kgs (polyurethane foam) with noth side G I Colour coated sheet ancillaries like C-channels, angles, sealene etc, door of size 1.8 x 2.0 m an alluminium powder coated window of size 1.00 x 2.00 m 1 No of structural glazing (fixed and sliding One side slope as per elclosed drawing cabin of size etc (Approved Quoated Rate) (10 x 12 Ft)	Each							
			2				2	250204.80	**500410.00**
	Approved Rate	268000.00							
	Tender premium @ -6.64%	-17795.20							
	Total	**250204.80**							
								Total	**2259519.00**
Rupees Twenty Two Lakh(s) Fifty Nine Thousand Five Hundred Nineteen Only									

CERTIFICATE:

1 The work spot has been inspected and the work is found necessary.
2 This estimate is prepared as per C.S.R. of PWD 2015-16, PWD Elecrical 2014-15 +/- Tender Premium
3 The provisions were made in this estimate are necessary and adequate.
4 This works come under B.B.M.P. limits.

Assistant Engineer
Ward No. 07

Assistant Executive Engineer
Bruhat Bangalore Mahanagara Palike
Kodigehalli Sub Division

Executive Engineer
Bruhat Bangalore Mahanagara Palike
Byatarayanapura Division

"Modified Estimate Sanctioned"

Chief Engineer
Yelahanka Zone
Bruhath Bangalore Mahanagara
Bangalore 92